

LB ANSWER 5 OF 10 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:698446 CAPLUS
DN 137:386286
TI Studies on solid superacid SO₂-4/TiO₂ modified by Tm loading
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SO Fenzi Cuihua (2002), 16(3), 195-198
CODEN: FECUEN; ISSN: 1001-3555
PB Kexue Chubanshe
DT Journal
LA Chinese
AB Solid superacid catalyst Tm-SO₄2-/TiO₂ was prepared by loading the rare earth element Tm on SO₄2-/TiO₂ and applied to esterification of citric acid and n-butanol. The effects of Tm loading on catalytic properties were studied and the correlation between its structure and properties was investigated by PyTPD, DTA, TGA and IR. Tm loading can enhance catalytic activity. The conversion of citric acid is 94.4% over Tm-SO₄2-/TiO₂ with 3% Tm loading. Tm can effectively decrease the carbon deposition on catalyst surface and restrain the loss of SO₄2-. Therefore, Tm-SO₄2-/TiO₂ exhibits good stability. The conversion of citric acid still remains 93.1% after 5 runs.

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